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Factors Affecting the Physical and Functional Performance of Buildings in Kenya

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ABSTRACT

Building performance is a broad subject whose meaning covers the ability of structures to serve the intended function based on a well-defined criterion such as the assessment of functional, physical,

environmental, or even social attributes considered jointly or separately. Building failures and general collapses are some of the most severe consequences of failed performance of buildings which have a great impact on livelihoods yet have remained persistent in Kenya over decades despite various interventions. This paper analyses building performance based on observable attributes and sentiments of respondents collected from construction project sites across Kenya. The study aimed to characterize buildings that are likely to fail physically and functionally at different stages based on five factors drawn from the literature as institutional, ethical, financial, legal, and technical factors, with the intention of proposing the necessary stop-gap measures. The study employed a cross-sectional (survey) design in which quantitative research methods were applied to collect and analyze data from a random sample of 400 building construction projects selected through proportionate cluster sampling across the 47 counties of Kenya. A semi-structured questionnaire was used to gather data on the perception of industry professionals, building users, and generally the stakeholders on the identified area of the research. Data was analyzed using descriptive statistics, factor analysis, and regression analysis. The physical performance of buildings appeared to cause an alarming concern with elements such as wall and slab stability recording poor scores. Based on functional performance the aspects of disability mainstreaming and compliance to green building standards were noted to be under-performing. Multiple Regression analysis results revealed that institutional, ethical, financial, legal, and technical factors explained 17.1% of the variability in building performance. Notably, only ethical, legal, and technical factors were the statistically significant predictors of building performance. The study thus recommends a detailed review, restructuring, and optimization of the ethical, legal, and technical environment of building construction management to enhance buildings performance.

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